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EXAMINER	
GREENE, JOSEPH L	

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2452	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail3@bakerbotts.com
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Office Action Summary	Application No.	Applicant(s)	
	10/825,539	BALLEW ET AL.	
	Examiner	Art Unit	
	JOSEPH GREENE	2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :08/27/2010, 12/09/2010, 01/05/2011, 01/05/2011, 01/26/2011, 02/24/2011.

DETAILED ACTION

1. Claims 1 – 39 are currently pending in this application and claims 1-12, 23, and 37 are amended as filed on 12/09/2010.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-11 and 37 are rejected under 35 U.S.C. 101 as the claimed invention is directed to non-statutory subject matter.

3. With respect to claims 1 and 37, they are directed towards "**computer-readable media comprising software.**" The specification is silent regarding the meaning of this term. Thus, applying the broadest reasonable interpretation in light of the specification and taking into account the meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art (MPEP §2111), the claim as a whole covers both transitory and non-transitory media. A transitory medium does not fall into any of the 4 categories of invention (process, machine, manufacture, or composition of matter). Thus, the system is directed towards software per se. Furthermore, claims 2-12 are dependent upon claim 1 and are directed towards the same software modules. Therefore, they are also rejected.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 9, 12-14, 23-25, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blumrich et al. (Pre-Grant Publication No. US 2004/0103218 A1), hereinafter Blumrich, Prael et al. (Patent No. US 7,065,764 B1), hereinafter Prael.

6. With respect to claims 1 and 23, Blumrich disclosed Computer-readable media comprising software, the software when executed by one or more computer systems operable to execute the software, the software comprising (0024, lines 28-33 and 0025, lines 4-7): a plurality of cluster agents, each cluster agent associated with one of a plurality of nodes, each node comprising a switching fabric and at least two processors integrated to the card ([0057], lines 1-14 and the switching fabric can be seen in claim 5, lines1-5), the at least two processors operable to communicate with each other via a direct link between them and communicably coupled to the switching fabric integrated to the card, the switching fabric operable to communicably couple, via another switch integrated to another card of another node, the at least two processors to at least two processors integrated to the other card of the other node (0057, lines 1-4), the cluster agent operable to determine a status of the associated node ([0210], lines 4-9);

However, Blumrich did not explicitly state a cluster management engine communicably coupled to the plurality of nodes and operable to dynamically allocate a particular subset of the plurality of nodes to a particular job based on the determined status of each of one or more of the plurality of nodes and execute the job selected from a queue comprising a plurality of jobs using the particular subset. Also, Blumrich did not explicitly state that the switching fabric was an integrated switching fabric.

On the other hand, Prael did teach a cluster management engine communicably coupled to the plurality of nodes (column 1, lines 60-64) and operable to dynamically allocate a particular subset of the plurality of nodes to a particular job selected from a queue comprising a plurality of jobs (column 1, lines 60-64 and column 7, lines 36-41) based on the determined status of each of one or more of the plurality of nodes and execute the job using the particular subset (column 7, lines 41-50, where the availability/unavailability of the nodes is the utilized status information). Prael also taught that the switching fabric was an integrated switching fabric (Column 4, lines 10-17). Both the systems of Blumrich and Prael are directed towards management for multiprocessing systems and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the teachings of Blumrich, to use integrated switching fabrics and dynamic job allocation, as taught by Prael. Integrated switching fabrics improve the efficiency of the system by providing more space within a system and also faster (integrated) switching. Furthermore, dynamic job allocation allows a system to make the most efficient use of its resources. Lastly, although not inherent, dynamic job allocation is given within a multi-processing system.

7. With respect to claim 12, Blumrich disclosed a method comprising: determining a status of each of at least a subset of a plurality of nodes ([0210], lines 4-9) , each node comprising a switching fabric integrated to a card and at least two processors integrated to the card (0057, lines 1-14), the at least two processors operable to communicate with each other via a direct link between them and communicably coupled to the switching fabric integrated to the card, the switching fabric operable to communicably couple, via another switch integrated to another card of another node, the at least two processors to at least two processors integrated to the other card of the other node (0057, lines 1-4); dynamically executing the job using the particular subset ([0226], lines 20-22, using run-time library information to configure hardware is dynamic allocation), but Blumrich did not explicitly state the fabric being a switching fabric or the dynamic allocation being particular subset of the plurality of nodes to a particular job selected from a queue comprising a plurality of jobs, based on the determined status of each of one ore more of the plurality of nodes. However, Prael did teach the fabric being a switching fabric (Column 4, lines 10-17) and the dynamic allocation being particular subset of the plurality of nodes to a particular job selected from a queue comprising a plurality of jobs (column 1, lines 60-64 and column 7, lines 36-41) based on the determined status of each of one ore more of the plurality of nodes (column 7, lines 41-50).

Both the systems of Blumrich and Prael are directed towards management for multiprocessing systems and therefore, it would have been obvious to a person of

ordinary skill in the art, at the time of the invention, to modify the teachings of Blumrich, to use integrated switching fabrics and dynamic job allocation, as taught by Prael. Integrated switching fabrics improve the efficiency of the system by providing more space within a system and also faster (integrated) switching. Furthermore, dynamic job allocation allows a system to make the most efficient use of its resources. Lastly, although not inherent, dynamic job allocation is given within a multi-processing system.

8. As for claims 2, 13, and 24, the combination of Blumrich and Prael disclosed all of the limitations described in claims 1, 12, and 23 (respectively). In addition, Blumrich taught being further operable to determine a topology of the plurality of nodes ([0255], lines 1-5) based, at least in part, on the determined status of the nodes ([0225], lines 1-10, the network determines the status of elements to decide if it favors another method).

9. As for claims 3, 14, and 25, the combination of Blumrich and Prael disclosed all of the limitations described in claims 2, 13, and 24 (respectively). In addition, Blumrich taught wherein the topology comprises a three dimensional Torus ([0015], lines 1-5).

10. As for claims 34, 35, and 36, the combination of Blumrich and Prael disclosed all of the limitations described in claims 1, 12, and 23 (respectively). In addition, Blumrich taught wherein the card is a motherboard (0006, lines 1-10).

11. As for claim 9, the combination of Blumrich and Prael disclosed all of the limitations described in claim 1. In addition, Blumrich Prael taught wherein the queue comprises a plurality of jobs awaiting execution, each job submitted by a respective user; and the queue is on of a plurality of queues, each queue associated with a respective virtual cluster of nodes (column 1, lines 60-64 and column 7, lines 36-41).

12. Claims 4-5, 8, 10-11, 15-16,19-22, 26-27, and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blumrich, in view of Prael, as applied to claims 1, 12, and 23 (respectively), and in view of Allen et al. (The Cactus Worm: Experiments with Dynamic Resource Discovery and Allocation in a Grid Environment), hereinafter Allen.

13. As for claims 4, 15, and 26, the combination of Blumrich and Prael taught all of the limitations described in claims 1, 12, and 23 (respectively). In addition, Blumrich taught wherein each node comprises at least one host channel adapter (figure 2, item 49, where an Infiniband link is comprised of host channel adapters); and the cluster management engine further operable to dynamically allocate a virtual cluster in the plurality of nodes. But Blumrich did not explicitly state a virtual cluster nor did he teach a dynamically allocated subset for executing the job comprising at least a subset of the virtual cluster. However, Allen taught such a system (Introduction, lines 4-8). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Blumrich in order to utilize dynamic allocation of virtual clusters,

as taught by Allen, in order to make an efficient system that can adjust to different size workloads without undue hardship.

14. As for claims 5, 16, and 27, the combination of Blumrich and Prael disclosed all of the limitations described in claims 4, 15, and 26 (respectively). In addition, Blumrich taught the cluster management engine further operable to: dynamically allocate a second particular subset of nodes in the virtual cluster; and execute a second job using the second particular subset ([0024], lines 1-7; [0028], lines 3-7, where parallel processing is the second subset of nodes).

15. As for claims 8, 19, and 30, the combination of Blumrich and Prael disclosed all of the limitations described in claims 4, 15, and 26 (respectively). In addition, Blumrich taught the cluster management engine further operable to dynamically allocate a second cluster in the plurality of nodes ([0024], lines 1-7; [0028], lines 3-7, where parallel processing is the second subset of nodes). But Blumrich did not explicitly state allocating virtual clusters. However, Allen did (Introduction, lines 4-8).

Both the systems of Blumrich and Allen are directed towards management for multiprocessing systems and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the teachings of Blumrich to allocate virtual clusters, as taught by Allen, in order to provide a system with increased efficiency, as the system will be able to perform small tasks along side of big tasks, instead of making all tasks wait for the larger task to be completed.

16. As for claims 20, and 31, the combination of Blumrich and Prael disclosed all of the limitations described in claims 19, and 30 (respectively). In addition, Blumrich taught the second virtual cluster comprises different nodes from the first virtual cluster ([0028], lines 3-11).

17. As for claims 10, 21, and 32, the combination of Blumrich and Prael disclosed all of the limitations described in claims 1, 12, and 23 (respectively). In addition, Blumrich taught wherein to execute the job using the particular subset (see the rejection for claim 1) the cluster management engine operable to: receive a job request comprising one or more parameters (in performing calculations, the process of receiving and carrying out a job is taking place); dynamically allocate the subset of the plurality of nodes, and execute the job using the dynamically allocated subset ([0226], lines 2-22). But Blumrich did not explicitly state determine dimensions of the job based, at least in part, on the one or more job parameters or based at least in part, on the determined dimensions.

However, Allen did teach such a system (Introduction, lines 4-8, where changing based off of characteristics requires that dimensions are determined). It would have been obvious to a person of ordinary skill, in the art, at the time of the invention to modify the teachings of Blumrich in order to determine dimensions, as taught by Allen. Doing so provides a system that can better handle its workloads. Furthermore, determining dimensions or status would likely be used in dynamic allocation of any sort.

18. As for claim 11, 22, and 33, the combination of Blumrich and Prael disclosed all of the limitations described in claims 10, 21, and 32 (respectively). In addition, Blumrich taught the cluster management engine further operable to: select a policy ([0255], lines 1-15, where the Torus, global tree, etc are different policies) based on the job request; and dynamically determine the dimensions of the job further based on the selected policy ([0226], lines 20-22).

19. Claims 6-7, 17-18, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blumrich, in view of Prael, in view of Allen, as applied to claims 4, 15, and 26, and in further view of Zircher et al. (Pre-Grant Publication No. US 2003/0217105 A1), hereinafter Zircher.

20. As for claims 6, 17, and 28, they are rejected to on the same basis as claims 4, 15, and 26 (respectively) above. However, the combination of Blumrich, Prael, and Allen did not explicitly state the virtual cluster associated with a user group. However, Zircher did teach such a system ([0097], lines 10-13, where the designated devices form the user groups). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the teachings of Blumrich, Prael, and Allen in order to utilize user groups, as taught by Zircher. Doing so greatly increases the autonomy of the s use and allowing it to serve a higher volume of customer/clients.

21. As for claims 7, 18, and 29, they are rejected on the same basis as claims 6, 17, and 28 (respectively) above. In addition, Zircher taught the cluster management engine further operable to verify a user submitting the job based, at least in part, on the user group ([0097], lines 10-13 and [0102], lines 1-2, in the process of utilizing the access control list, the verification of the user is taking place).

22. Claims 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blumrich, in view of Prael, and in further view of Official Notice.

23. With respect to claims 37, 38, and 39, Blumrich disclosed Computer-readable media comprising software, the software when executed by one or more computer systems operable to execute the software (0024, lines 28-33 and 0025, lines 4-7), the software comprising: a plurality of cluster agents, each cluster agent associated with one of a plurality of nodes, the cluster agent operable to determine a status of the associated node ([0057], lines 1-14), each node comprising: at least two first processors integrated to a first card and operable to communicate with each other via a direct link between them (0057, lines 3-4); the first processors communicably coupled to the first switch, the first switch operable to communicably couple the first processors to six or more second cards each comprising at least two second processors integrated to the second card and a second switch integrated to the second card operable to communicably couple the second processors to the first card and at least five third

cards each comprising at least two third processors integrated to the third card and a third switch integrated to the third card (0203, lines 8-10 and figures 1 and 5);

Blumrich also disclosed the first processors being operable to communicate with particular second processors on a particular second card via the first switch and the second switch on the particular second card; the first processors being operable to communicate with particular third processors on a particular third card via the first switch, a particular second switch on a particular second card between the first card and the particular third card, and the third switch on the particular third card (0057, lines 1-14, where the first switch is the same as the second switch).

However, Blumrich did not explicitly state a cluster management engine communicably coupled to the plurality of nodes and operable to dynamically allocate a particular subset of the plurality of nodes to a particular job based on the determined status of each of one or more of the plurality of nodes and execute the job selected from a queue comprising a plurality of jobs using the particular subset. Also, Blumrich did not explicitly state that the switching fabric was an integrated switching fabric.

On the other hand, Prael did teach a cluster management engine communicably coupled to the plurality of nodes (column 1, lines 60-64) and operable to dynamically allocate a particular subset of the plurality of nodes to a particular job selected from a queue comprising a plurality of jobs (column 1, lines 60-64 and column 7, lines 36-41) based on the determined status of each of one or more of the plurality of nodes and execute the job using the particular subset (column 7, lines 41-50, where the availability/unavailability of the nodes is the utilized status information). Prael also

taught that the switching fabric was an integrated switching fabric (Column 4, lines 10-17). Both the systems of Blumrich and Prael are directed towards management for multiprocessing systems and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the teachings of Blumrich, to use integrated switching fabrics and dynamic job allocation, as taught by Prael. Integrated switching fabrics improve the efficiency of the system by providing more space within a system and also faster (integrated) switching. Furthermore, dynamic job allocation allows a system to make the most efficient use of its resources. Lastly, although not inherent, dynamic job allocation is given within a multi-processing system.

However, the teachings of the combination of Blumrich and Prael did not explicitly state two processors on a card that communicate with a central authority without communicating via either second processor on the particular second card. However, the examiner gives official notice that the purpose of multi-processing is to improve the efficiency of processing tasks and therefore, not having the two processors communicate would require a third authority to designate the tasks, just increasing overhead of the system and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the teachings of the combination of Blumrich and Prael to utilize processors that don't co-communicate.

Response to Arguments

24. Applicant's arguments filed 12/09/2010 have been fully considered but they are not persuasive.

25. The applicant's argument mostly center around the teachings of switching between multiple nodes and thus, to clearly sum the arguments, the applicant argues on page 15 that " **While the cited portion discloses that one of the plurality of processing nodes is a dedicated I/O node, which Applicants assume the Examiner is attempting to equate to the claimed first switch (or at least to the component operable to perform the operations of the claimed first switch), the cited portions do not disclose that, for each node, the processors of the node are operable to communicate via a switch integrated to a card of the node to particular second processors on a particular second card in a second switch integrated to the second card, as recited in Claim 37. In fact, given that the Examiner appears to apply the nodes of *Blumrich* to the claimed nodes, it is unclear how *Blumrich's* disclosure of a separate node as a dedicated I/O node could possibly disclose that each node comprises a first switch and that "the first processors [of the node are] operable to communicate with particular second processors on a particular second card via the first switch and the second switch on the particular second card**."

However, Blumrich does teach the aforementioned limitations. It can be seen in section 0057, lines 1-14 that the system contains a dual-processor on a single board. As it is necessary that the system be able to switch between the processors, which would thus require some sort of switching fabric (i.e. physical or logical). Likewise, there is a second processor on the second side of the board, which is a separate board

(logic wise), that handles the message passing operations. Thus, the system would likewise need to be able to switch between those processors as well, Which would thus require a switching fabric. However, for a more explicit showing, it can be seen in Blumrich's claim 5, that there is “dynamic switching between computing and message communication activities among individual nodes according to needs of an algorithm”, which thus, contains a switching fabric.

26. The applicant also argues on pages 16 and 17, that “**the Examiner states, "the purpose of multi-processing is to improve the efficiency of processing tasks and therefore, not having the two processors communicate would require a third authority to designate the tasks, just increasing overhead of the system and therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify the teachings of the combination of *Blumrich* and *Fung* to utilize processors that don't co-communicate." *See Office Action* at 12-13. Applicants do not necessarily agree. For example, "increasing overhead of the system" may provide a reason that a person of ordinary skill in the art would not include a central authority, and would instead use processors that communicate via either second processor on the particular second card.[1] As another example, it is not necessarily technically possible that one of ordinary skill in the art at the time of Applicants' invention could have simply modified existing systems in the manner suggested by the Examiner. Despite Applicants'**

requests, it does not appear to Applicants that the Examiner has provided a reference in support of the Examiner's position for this taking of Official Notice."

In order to provide a reference to teach the official notice that was taken, it can be seen in Talwar et al. (Patent No. US 7,644,153 B2), in column 6, lines 27-31, and figure 1, item 114, that the system uses grid computing with a multiprocessor. In grid computing, individual jobs are sent to individual processors or groups of processors that have been assigned to work in unison, in order for tasks to be performed. Likewise, the execution nodes send the completed jobs either back to the source node or to a job collector for compilation and completion. Neither of the aforementioned scenarios, however, has that the nodes performing the tasks communicate with the other parallel nodes (excluding the groups of nodes scenario where a group of nodes are logically one node).

27. The applicant argues on page 13 that "**The cited portion of *Blumrich* discloses that "[e]ach node contains a second processor for handling message passing operations." *Blumrich* at ¶0057. Even assuming that this portion discloses that a node may contain at least two processors, the cited portion does not disclose, teach, or suggest that the two processors are integrated to a first card, let alone that the two processors are operable to communicate with each other via a direct link between them.**" However, upon viewing Blumrich's figure 4, it can be directly seen that the system provides multiple possessors on a single card. Furthermore, Blumrich's section 0090, lines 5-32 show that the processors are all inter-operatively coupled to the

bi-directional links and are able to transmit to the uptree nodes that can, in turn, transmit to the down tree nodes; thus traveling to the other processors. Thus a direct logical link has been shown. Likewise, the claimed limitation does not specify a direct physical link.

28. The applicant also argues on pages 13 & 14 that "another example, as allegedly disclosing "**As another example, as allegedly disclosing "the first processors communicably coupled to the first switch, the first switch operable to communicably couple the first processors to six or more second cards each comprising at least two second processors integrated to the second card and a second switch integrated to the second card operable to communicably couple the second processors to the first card and at least five third cards each comprising at least two third processors integrated to the third card and a third switch integrated to the third card," the Examiner apparently relies on paragraph 203, lines 8-10 and Figures 1 and 5 of *Blumrich.* Paragraph 203 of *Blumrich* discloses that the "minimum partition consists of an 8x8x8 Torus**"... "**the cited portion discloses that Blumrich contemplates multidimensional nodes. However, merely disclosing multidimensional nodes does not disclose the numerous above-listed particular limitations**." However, viewing section 0090, lines 5-32, it can be clearly seen that any of the processors may talk to any of the other processors that are located on any of the ASIC cards that are within the Torus network. Furthermore, figure 4 shows that there are at least two processors on a single card, and claim 5 teaches the dynamic switching.

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSEPH GREENE whose telephone number is (571)270-3730. The examiner can normally be reached on Mon - Thu, 8:00AM - 4:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu Nguyen can be reached on 5712726967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLG

/DOHM CHANKONG/
Primary Examiner, Art Unit 2452